

"Three principles from brain research: emotional safety, appropriate challenges, and self-constructed meaning suggest that a one-size-fits-all approach to classroom instruction teaching is ineffective for most students and harmful to some."

Teach Me Teach My Brian – A Call For [Differentiated Classrooms](#) - Carol Ann Tomlinson  
November 1998 | Volume 56 | Number 3 | How the Brain Learns | Pages 20-25

The Brains Behind the Brain

[http://www.ascd.org/publications/educational\\_leadership/nov98/vol56/num03/The\\_Brains\\_Behind\\_the\\_Brain.aspx](http://www.ascd.org/publications/educational_leadership/nov98/vol56/num03/The_Brains_Behind_the_Brain.aspx)

" No two children are alike. An enriched environment for one is not necessarily enriched for another. "

- No two children learn in the identical way.
- In the classroom we should teach children to think for themselves.
- One way is to group children so they are talking to each other, they are asking questions of each other, they are learning to be teachers. One of the most important concepts for a 5 year old to know is that he or she can teach because you have to understand something to teach it."

Marian Diamonds: Professor of Neuroanatomy at Berkeley

"So our environment, including the classroom environment, is not a neutral place. We educators are either growing dendrites or letting them wither and die. The trick is to determine what constitutes an enriched environment. A few facts about the brain's natural proclivities will assist us in making these determinations:

1. The brain has not evolved to its present condition by taking in meaningless data; an enriched environment gives students an opportunity to make sense out of what they are learning, what some call the opportunity to "make meaning"
2. The Brain develops in an integrated fashion over time. Babies do not talk one week, tie their shoes the next, and then work on their emotional development. An enriched environment addresses multiple aspects of development simultaneously.
3. The brain is essentially curious and it must be to survive. It constantly seeks connections between the new and the known. Learning is a process of active Construction by the learner and enrichment gives students the opportunity to relate what they are learning to what they already know. As noted educator Phil Schlechty says, "Students must do the work of learning."
4. The brain is innately social and collaborative. Although the processing takes place in our students independent brains, their learning is enhanced when the environment provides them with the opportunity to discuss their thinking out loud to bounce their ideas off their peers and to produce collaborative work.

What Do We Know from Brian Research? by Pat Wolfe and Ron Brandt  
Nov. 1998 Educational Leadership - How the Brain Works  
Go to [Educational Leadership Index and Look up Nov 1998](#)

## In Summary:

Extrapolating from the above quotations we may conclude the following:

- Not all students need to be doing the same thing at the same time. Some group work would therefore be appropriate.
- Students are not all at the same level of ability and they don't learn in the same way. It follows that different groups within the same class should be working at a variety of different levels of complexity and/or difficulty simultaneously, but at different rates.
- Students need to be actively involved in making decisions and modifications to their learning efforts.
- Students need appropriate challenges, a secure environment, an opportunity to explore ideas and have fun learning.
- Students need to learn to ask questions, think and interact verbally.
- Students need to be able to construct meaning by interacting with peers, problems, issues and with materials.
- Learning is more effective if concepts are learned in context and related to existing knowledge. Content needs to be relevant, integrating multiple aspects simultaneously.
- Peer teaching may be as valuable for the child who is "teaching" as for the "learner".

*[www.enhancelearning.ca](http://www.enhancelearning.ca)*